CHAPTER 44

Creating Subscriptions with the Channel Definition Format

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Push technology was going to revolutionize the way people used the Web. Despite the hype, push technology never materialized as promised. One of the problems with early push technology was that no standard existed. If you wanted to use push technology—which is better entitled *smart pull*—you had to get a client that supported it and then the server from which you wanted to pull also had to support it. Or, you could use an agent to search the Web for you, pulling down new pages that met your criteria. Either way was cumbersome and nonstandard.

The *Channel Definition Format* (CDF) is an attempt by Micro soft to standardize the world of push technology. Some push vendors have signed up to support the standard, but Netcape has not. Netscape promotes its own proprietary subscription format, which this book does not discuss at length.

Introducing Push Options

What is push technology? *Push* (also known as *server-push/client-pull*) *technology* is the idea that citizens of the Web can define their interests on their own computers in some sort of channel client. Then that client can go out to the Web at regular intervals and download only the material of interest to Web citizens. This idea was good, but it hasn't been implemented with much success.

What push has come to mean in actuality is the same citizens of the Web (sometimes called *Webizens* or *Netizens*) subscribing to channels that interest them. At regular intervals, the client software can go only to those channel sites and download the latest updates to pages.

Nothing new

The truth about push technology is nothing new is there. Push uses the HTTP protocol to get pages off a server (or multiple servers). The difference between push and other means of getting at Web pages is that with push, you set up some preferences up-front (or as you go) and the pages are *pre-cached* (a fancy expression for downloaded) to your client during low-use times. You don't have to wait for the download; it happens in the background.

Two kinds of push technology exist — those using keywords and those using subscriptions. With *keywords,* you define what keywords you want included, just as if you were at a search engine page performing a regular search. The client that sits on your computer communicates during nonpeak hours with a central server, which has agents crawling and indexing the Web. Your client queries that server for any new pages it has found during the last period you defined in your search criteria (day, week, month, whatever). It returns the page descriptions and URLs of all the pages matching your criteria, just like a search engine. Then you can scroll through the pages it returns and load any that sound interesting into your browser. As you can see, there isn't much being *pushed* in this scenario.

The second kind of push technology uses channels.

Channels

Here the television analogy is appropriate. *Channels* are Web destinations to which you can subscribe. Why would you subscribe? So a site's contents can be precached onto your desktop during nonpeak hours (when the Web won't keep your unattended computer waiting). What can a channel include? Anything that goes into a Web page can be part of a channel. A channel is simply a preloaded bookmark. If you do take advantage of channels, you'll find when you go to a channel to which you subscribed, it loads instantly. Why? Because it is loading from cache memory.

If you want to follow all the late-breaking developments at Netscape and you visit their site daily to find out anyway, why not subscribe to the Netscape channel? This way, when you do visit their site, it loads instantly.

What is the downside of channels? If you subscribe to too many, your cache could become dangerously large. When you subscribe to a channel, you are prompted with a setting for the cache size you are willing to allow this channel to occupy. The default (on Netcaster) is 1MB. If you subscribe to 30 channels and each one uses up 30MB of cache, you could quickly have a lot of garbage on your machine.

Marketing with Push

From a Web developer's perspective, you want to know how you can get your page before as many of the right people as possible. Unfortunately, the first kind of push technology doesn't facilitate your marketing efforts any more than does a search engine. Changing your content — at least a little bit every day — helps your page appear in more results lists, but pretty much every page on the Web using the `META` elements successfully has the same chances of being found.

Using channels, however, can help you set your site off from the rest. Most Web sites don't take advantage of channels and subscriptions. Consequently, those that do — mostly sports, entertainment, and news sites — set themselves apart.

You can be especially successful in getting your visitors to subscribe if you meet the following criteria:

- ✦ Give your visitors a compelling reason to download and install a Version 4 or higher browser, so the client software is built into the browser.
- ✦ Host a newsgroup or chat room on your site that is both relevant to the rest of your site and engages visitors.
- ✦ Keep your content current.
- ✦ Link to other sites with current content.

Introducing Channel Definition Format

The closest thing to a standard for channel definition is the Channel Definition Format (CDF), which has been proposed by Microsoft. CDF certainly has the potential to be the most successful solution to the different, proprietary approaches to delivering push content because it is based on the XML standard discussed in Chapter 6. The XML standard is the W3C's proposal for making the Web more extensible (that's where the *X* comes from in XML: *eXtensible Markup Language*).

Don't expect the CDF to be roundly endorsed by any governing body — this doesn't happen too often on the Web — but you can develop your own channels with it. The CDF is easy to use and up and working in Internet Explorer 4 and higher. Best of all, some Web-development tools (notably HotDog Pro) have channel wizards, which take you through the creation of the Channel Definition File (.cdf file).

The Channel definition has three parts: the channel, the items, and the schedule. All this information goes into the .cdf file.

CDF (XML) syntax

The CDF is based on XML. This means, even though CDF has elements and attributes, like HTML, it won't look exactly the same. In CDF, each element is contained in angle brackets (<>) but, instead of having a start tag and an end tag, there is only one tag, with a slash (/) right before the close to the angle brackets. An example helps to clarify this:

```
<LOGO HREF="http://www.overtheweb.com/images/wave.ico"
STYLE="icon" />
```

The previous is the tag for the `LOGO` element. There are two attributes: `href` and `style`.

The `CHANNEL` element is an HTML element that contains the actual channel definition as its content. Within the `CHANNEL` element, you want to include — as a minimum — the two graphics that are part of your channel: a title and an abstract.

Images

If your channel definition has nothing else, it must have two graphics:

1. A 16×16-pixel icon, stored in a .ICO file (referred to as an *icon*)
2. A 32 × 80-pixel graphic image, stored as a .GIF file or a .JPEG file (an *image*)

You can also have an optional wide image, which is 32 × 194 pixels, and is also either a .GIF or .JPEG. This last type of image is referred to as *image-wide*.

Images are included in your channel using the `LOGO` element, which is defined using XML syntax. The `LOGO` element has two attributes: `href`, which gives the URL of the image, and `style`, which can be one of three values: icon, image, or image-wide.

```
<LOGO href="http://www.somesite.com/images/pict1.ico"
style="icon" />
<LOGO href="http://www.somesite.com/images/pict2.gif"
style="image" />
<LOGO href="http://www.somesite.com/images/big-pict.gif"
style="image-wide" />
```

Title

Your channel's title is included in a regular old HTML `TITLE` element:

```
<TITLE>Sample Channel Created for Chapter 44</TITLE>
```

Abstract

Your channel's abstract is included in an HTML ABSTRACT element:

```
<ABSTRACT>This channel will give you the examples that you need
to create a channel, as described in Chapter 44 of the HTML 4
Bible.</ABSTRACT>
```

Scheduling pre-caching of your channel

The CDF offers an HTML element called SCHEDULE, which you can use to indicate the frequency with which your page is updated. This information tells the client workstation how frequently to check the server to see whether the content has changed. The SCHEDULE element has three attributes: startdate, stopdate, and timezone. The content of the SCHEDULE element is a series of XML elements: INTERVALTIME, EARLIESTTIME, and LATESTTIME. You needn't use them all. Only use the ones you need.

Both the date attributes take a date in the format of YYYY-MM-DDTHH:mm, where YYYY is the four-digit year, MM is the two-digit month, DD is the two-digit day, *T* is the letter "T" indicating the time formatting is beginning, HH is the two-digit hour, and, finally, mm is the two-digit minute.

```
<SCHEDULE startdate="2000-04-01T14:00"></SCHEDULE>
```

In the preceding example, the schedule would be good starting on April 1, 2000, at 2 p.m. It would not have an end date.

For the timezone attribute, the time zone is indicated relative to Greenwich Mean Time. Thus, Eastern Standard Time is +5. To add this to the previous example:

```
<SCHEDULE startdate="2000-04-01T14:00"
TIMEZONE="+5"></SCHEDULE>
```

The XML elements, INTERVALTIME, EARLIESTTIME, and LATESTTIME all take one or more of the following interval attributes: day, hour, and min.

To complete the previous example:

```
<SCHEDULE startdate="2000-04-01T14:00" TIMEZONE="+6">
  <INTERVALTIME day="7" />
  <EARLIESTTIME hour="4" min="30" />
  <LATESTTIME hour="8" min="30" />
</SCHEDULE>
```

Items

Items are hierarchical nodes within the channel. Items are also where the content that belongs to your subscription is defined. One channel can have multiple items within it. You can define items to make the channel more easily navigable for subscribers. For example, you can define a channel that points to your home page and then have items that point to technical resources, customer service, a chat room, and so forth.

The other thing you can do with items is to specify the number of levels the client should pre-cache (meaning the number of levels of links to follow), and the usage of the channel. The usage can be either `Channel` or `ScreenSaver`.

```
<ITEM href="http://www.somesite.com/images/screensaver.html"
level="1">
  <USAGE value="ScreenSaver"></USAGE>
</ITEM>
```

You can specify as many items as you need. In the previous example, the item is a screensaver.

Creating a subscription doesn't require the detail given in the previous example. A subscription can be as simple as:

```
<CHANNEL href="http://www.mychannel.com" level="3">
  <LOGO href="http://www.mychannel.com/images/logo.ico"
image="icon" />
  <LOGO href="http://www.mychannel.com/images/pict1.gif"
image="image" />
  <TITLE>This is the title</TITLE>
  <ABSTRACT>This is the abstract</ABSTRACT>
  <SCHEDULE starttime="2000-05-20" timezone="+6">
  <INTERVALTIME day="7" />
  </SCHEDULE>
  <ITEM href="http://www.mychannel.com" level="1">
  <USAGE value="ScreenSaver"></USAGE>
  </ITEM>
</CHANNEL>
```

Subscribing to a Channel

What does it mean to subscribe to a channel? The word *subscribe* isn't as apt as the word *channel* in the television analogy. In fact, subscribing to a channel involves no more than having your client copy the .cdf file so it knows where to get the pages that constitute the channel and the frequency information found in the `SCHEDULE` element. In Internet Explorer 4 and higher, you can do this by selecting "Add to Favorites" from the Favorites menu.

From a developer's perspective, you want to create a button on your subscription information page. This page should explain what is involved in subscribing to anyone who is thinking of subscribing. The page should explain how frequently you update the site, the advantages of subscribing, and the technical requirements to subscribe. In the case of the previous CDF example, subscribers must have Internet Explorer 4 or higher as their browser.

To create the subscription, create an image on which the visitor can click and then place that image within an anchor element that refers to your .cdf file.

```
<A href="mychannel.cdf" alt="Subscribe to this channel"><IMG
src="images/subscribe.gif"></A>
```

From Here

Jump to Chapter 48 and learn about JavaScript.

Proceed to Chapter 45 to find out how to access external databases.

Summary

Channels can be a great service to visitors to your site. If you have content that is updated regularly and your visitors want to be apprised of the changes to your site on a regular basis, then your site is ripe for subscriptions. Creating a channel is relatively simple. One standard (if you can call it that) is the Channel Definition Format, which is simply a text file stored in a .cdf file.

To create a .cdf file, you must learn a bit of XML syntax. Because most of the channel definition is comprised of HTML elements, however, it will look familiar to you.

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